

BIOC 535: Practical Protein Crystallography

Credits: 1

Prerequisites: Concurrent or prior enrollment/completion of Bioc482

Date/Time/Place: To be arranged, X-ray crystallography facility

Instructors: George N. Phillips, Jr (georgep@rice.edu) BRC 717 and Jayashree Soman (jaya@rice.edu).

Textbook/Readings: Lattman and Loll, Protein crystallography: A concise guide. 2008, Johns Hopkins Press (Kindle or Amazon), IUCr On-line dictionary of crystallography (free access),

Course Description: Structural biology plays an important role in defining atomic structures of biomolecules and understanding relationships between structure, dynamics and function. This laboratory-based course will give an introduction to practical techniques of X-ray crystallography. Designed for advanced undergraduates and beginning graduate students in the biological or physical sciences.

Course Objectives and expected learning outcomes:

- Growth of protein crystals by vapor diffusion
- Safe collection of X-ray diffraction data from protein crystals and processing of data
- Molecular replacement solution of the structure followed by refinement and model validation

Grading: Course grade based on completion of the steps above and a brief report.

Rice Honor Code: Students are required to use proper citations and follow other practices outlined in the Rice Honor Code information on Academic Fraud and Acknowledgement of Sources: <http://honor.rice.edu/honor-system-handbook/>

Accommodations for students with disabilities: Any student with a documented disability needing academic adjustments or accommodations is requested to speak with the instructor during the first two weeks of class. All discussions will remain confidential. Students with disabilities also should contact Disability Support Services in Allen Center.